

IN THE CLAIMS:

The following is a complete listing of the claims, and replaces all earlier version and listings.

1. (currently amended): An image processing apparatus, comprising:
generation means for generating a bitmap image on the basis of inputted object data;

hold means for holding attribute information representing attributes of the inputted object data in units of pixels of a bitmap image generated by said generation means, the attribute information being formed by allocating plural bits to each pixel of the bitmap image and each of the plural bits indicating a different type of attribute respectively;

conversion means for converting the bitmap image generated by said generation means into data capable of being processed by an image output unit; and

switch means for switching the contents of processing for each pixel of the bitmap image in said conversion means on the basis of the plural bits of the attribute information held by said hold means corresponding to that pixel,

wherein the number of bits used, from the plural bits of the attribute information, by said switch means is different in accordance with characteristics of image processing to be performed, and

wherein attribute information which is more frequently used is located in the lower bits and attribute information is hierarchically retained.

2. (previously presented): The image processing apparatus according to claim 1, wherein said holding means holds an attribute map in which the attribute

information is arranged for each pixel corresponding to a two-dimensional coordinate position of the bitmap image.

3. (previously presented): The image processing apparatus according to claim 1, wherein said holding means embeds the attribute information into bits of a part of each pixel data of the bitmap image.

4. (previously presented): The image processing apparatus according to claim 1, wherein the attribute information includes information representing whether object data corresponding thereto has the form of bitmap data or the form of vector data.

5. (previously presented): The image processing apparatus according to claim 1, wherein said conversion means includes processing for converting a bitmap image generated by said generation means into binary data using a dither matrix, and said switch means changes the dither matrix used in said conversion means on the basis of the attribute information.

6. (previously presented): The image processing apparatus according to claim 1, wherein said generation means generates a bitmap image based on RGB color space, said conversion means includes color conversion processing for converting each pixel data of the bitmap image into pixel data represented by YMCK color space, and said switch means changes an algorithm of said color conversion processing on the basis of the attribute information held by said hold means.

7. (previously presented): The image processing apparatus according to claim 1, wherein the attribute information is configured by a plurality of bits, and said switch means switches the contents of processing of said conversion means in accordance with a combination of ON/OFF states of those bits.

8. and 9. (canceled)

10. (previously presented): The image processing apparatus according to claim 1, wherein the object data is represented by a page description language.

11. (currently amended): A storage medium storing a control program for image processing, said control program comprising:

codes for a generation process for generating a bitmap image on the basis of object data inputted;

codes of a holding process for holding attribute information representing attributes of the object data in units of pixels of a bitmap image generated in said generation process for holding in a memory, the attribute information being formed by allocating plural bits to each pixel of the bitmap image and each of the plural bits indicating a different type of attribute respectively;

codes of a conversion process for converting the bitmap image generated in said generation process into data capable of being processed by an image output unit; and

codes of a switching process for switching the contents of processing for each pixel of the bitmap image in said conversion process on the basis of the plural bits of the attribute information corresponding to that pixel,

wherein the number of bits used, from the plural bits of the attribute information, in execution of said codes of the switching process is different in accordance with characteristics of image processing to be performed, and

wherein attribute information which is more frequently used is located in the lower bits and attribute information is hierarchically retained.

12. (currently amended): An image processing system having a host device and an image output unit, comprising:

generation means for generating a bitmap image on the basis of object inputted data;

hold means for holding attribute information representing attributes of said inputted object data in units of pixels of the bitmap image generated by said generation means, the attribute information being formed by allocating plural bits to each pixel of the bitmap image and each of the plural bits indicating a different type of attribute respectively;

conversion means for converting the bitmap image generated by said generation means into data capable of being processed by the image output unit; and

switch means for switching the contents of processing for each pixel of the bitmap image in said conversion means on the basis of the plural bits of the attribute information corresponding to that pixel,

wherein the number of bits used, from the plural bits of the attribute information, by said switch means is different in accordance with characteristics of image processing to be performed, and

wherein attribute information which is more frequently used is located in the lower bits and attribute information is hierarchically retained.

13. (currently amended): The image processing system according to claim 12, ~~wherein the attribute information includes information organized hierarchically,~~ and wherein there are one or more units of attribute information of low order concept which ~~[[is]]~~ are subordinate to that of high order concept.

14. (previously presented): The image processing system according to claim 12, wherein the attribute information contains information representing whether object data corresponding thereto represents a monochrome or a color object.

15. (previously presented): The image processing system according to claim 12, wherein the attribute information contains information representing whether object data corresponding thereto represents a character or any kind of object other than characters.

16. (previously presented): The image processing system according to claim 12, wherein the attribute information contains information representing whether it

has a single bit or a plurality of bit strings and whether or not it is a ground, and wherein said conversion means omits processing for a pixel which is a ground.

17. (currently amended): An image processing method, comprising the steps of:

generating a bitmap image on the basis of object data inputted;

holding in a memory attribute information representing attributes of the inputted object data in units of pixels of the bitmap image generated in said generating step, the attribute information being formed by allocating plural bits to each pixel of the bitmap image and each of the plural bits indicating a different type of attribute respectively;

converting the bitmap image generated in said generating step into data capable of being processed by an image output unit; and

switching the contents of processing for each pixel of the bitmap image in said converting step on the basis of a combination of the plural bits of the attribute information held in said holding step corresponding to that pixel,

wherein the number of bits used, from the plural bits of the attribute information, in said switching step is different in accordance with characteristics of image processing to be performed, and

wherein attribute information which is more frequently used is located in the lower bits and attribute information is hierarchically retained.

18. - 25. (canceled).

26. (currently amended): An image processing apparatus, comprising:
a bitmap image generator, arranged to receive inputted object data and to produce a corresponding bitmap image;

a data holding unit arranged to receive and to hold attribute information representing a attributes of the inputted object data in units of pixels of the bitmap image generated by said bitmap image generator, the attribute information being formed by allocating plural bits to each pixel of the bitmap image and each of the plural bits indicating a different type of attribute respectively;

a converter adapted to convert the bitmap image generated by said bitmap image generator into data capable of being processed by an image output unit; and

a switch unit, adapted and arranged to switch the contents of processing for each pixel of the bitmap image in said converter on the basis of a combination of the plural bits of the attribute information corresponding to that pixel,

wherein the number of bits used, from the plural bits of the attribute information, by said switch unit is different in accordance with characteristics of image processing to be performed, and

wherein attribute information which is more frequently used is located in the lower bits and attribute information is hierarchically retained.

27. (previously presented): The apparatus according to claim 1, wherein the characteristics of image processing to be performed indicate when importance is attached to either cost or image quality.

28. (canceled).